

WHAT IS CLAIMED IS

1. A battery-operated lighting device for use with any one of a plurality of rechargeable battery packs, each pack having a pair of terminals and a different operating voltage, said lighting device comprising a casing having first and second parts, a lighting unit including a light bulb provided at the first casing part, said light bulb having an optimum operating voltage, a battery chamber formed at the second casing part for receiving at least part of and locating said any one battery pack, a pair of electrical contacts located in the chamber for making electrical connection with respective terminals of said battery pack located by the chamber, and an electronic voltage regulating circuit provided within the casing and having an input and an output in electrical connection with the contacts and the light bulb respectively, said circuit being arranged to regulate the voltage of said battery pack down to substantially the optimum operating voltage of the light bulb for operating the light bulb.

2. The battery-operated lighting device as claimed in claim 1, wherein the chamber has an opening through which said part of the battery pack is insertable into the chamber, said opening having a periphery of a shape and size substantially the same as that of an adjacent periphery of said part of the battery pack for matching therewith when said battery pack is located by the

chamber.

3. The battery-operated lighting device as claimed in claim 2, wherein the outer surface of the casing forming the chamber is arranged to lie substantially flush with that of said battery pack when said battery pack is located by the chamber.

4. The battery-operated lighting device as claimed in claim 1, wherein the casing has a lower end that forms the chamber, said chamber having a bottom opening through which said part of the battery pack is insertable into the chamber, with the rest of said battery pack acting as a weighted base for the overall torch light.

5. The battery-operated lighting device as claimed in claim 4, wherein the casing has an upper end that supports the lighting unit and includes a middle section between the upper and lower ends that is shaped to form an upright handgrip.

6. The battery-operated lighting device as claimed in claim 1, wherein the voltage regulating circuit is implemented based on an integrated circuit chip to provide a substantially constant output voltage that is the optimum operating voltage of the light bulb, irrespective of an input voltage falling within a predetermined range.

7. The battery-operated lighting device as claimed in claim 6, wherein the voltage regulating circuit includes a feedback loop connected from the output back to the integrated circuit chip, which loop is arranged to provide a signal indicative of the level of the output voltage to enable the chip to maintain the output voltage at a substantially constant level.

8. The battery-operated lighting device as claimed in claim 6, wherein the predetermined range of input voltage is substantially from 9.6V to 18.0V DC.

9. The battery-operated lighting device as claimed in claim 8, wherein the operating voltages of said battery packs are substantially 9.6V, 12.0V, 13.2V, 14.4V, 15.6V, 16.8V and 18.0V.

10. The battery-operated lighting device as claimed in claim 1, wherein the optimum operating voltage of the light bulb is substantially 9.3V DC.